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ABSTRACT

A review is made of the possible applications within the libraries of the City of London Polytechnic of the three basic types of microforms--microfilm, microfiche, and microopaques. Major uses outlined involve: 1) the exploitation of existing data bases; 2) the storage of back issues of periodicals; 3) the presentation of programed instruction; 4) the development of a machine-based library catalog; 5) the dissemination of material for correspondence courses; 6) the development of special collections and archives; and 7) the creation of a slide collection of art materials. The conclusion is reached that microforms are an inexpensive, flexible means of storing large quantities of materials in small areas. Given the increasing trend toward the availability of microforms and the decreasing resistance to them by users, it is recommended that the Polytechnic's Library and Learning Resources Service begin to acquire microforms of major periodical runs and special collections and to invest in the necessary equipment. (PB)

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MICROFORM APPLICATIONS

within the

CITY OF LONDON POLYTECHNIC

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1. TYPES OF MICROFORM

There are basically three types of microforms available today:

1.1 Microfilm This comes in 16mm or 35mm roll or cassette format containing approximately 2,000 frames to a reel or cassette. It is more compact in storage than the next type (microfiche) but requires special storage facilities. It is difficult to produce extra copies of microfilm. Access to film is linear or serial. Speed of access is faster with cassettes.

1.2 Microfiche Microfiche is essentially film on 6" x 4" sheets containing anything from 60-200 images (if we include NCR's PCMI as fiche then the number of images rises to over 2,000). Each sheet carries an eye-legible title strip. Storage is in normal card cabinets or drawers. Fiche readers are generally cheaper than film readers. Access is random and reproduction of fiche is very cheap (about 8p.).

1.3 Microopaques These consist of large opaque white cards onto which print is photographically reduced. Standard reduction ratios are used and in order to increase the number of frames the card size is increased. Special storage is thus usually needed although a few opaques appear in standard 5" x 3" or 6" x 4".

MICROFORM APPLICATIONS

The remainder of this paper is concerned with possible applications within CLP. It does not include applications within Administration (e.g. accounting records) but concentrates mainly on applications of interest to the Library and Learning Resources Service and some Academic Departments. Each of the applications mentioned could well be the subject of a formal feasibility study and report. In some cases, but not all, the Department mentioned has been contacted and the ideas discussed.

2. EXPLOITATION OF EXISTING DATA BASES

2.1 National Technical Information Service (NTIS)

Over 75% of all R & D in the U.S.A. is government supported through Department of Defence, NASA, Atomic Energy Commission and, to a lesser extent, through civilian agencies such as Health, Education and Welfare. Contractual obligations oblige all grant recipients to make progress and final reports. These must be deposited at NTIS. NTIS also receives reports from all US government agencies together with many non-US funded reports from the U.S., U.K. and the rest of the world.

These it announces in a fortnightly abstracting service Government Reports Announcements which includes some 50,000-70,000 abstracts per year. Many of these (in fact probably the majority) are of subject interest to CLP Departments e.g. Chemistry, Physics, Sociology, Economics, Politics, Psychology, Management, Metallurgy, Marine Science, Transport etc.

Each report is available for about 20p. on microfiche. The report may take the form of interim and final reports on pure or applied research or development work, state of the art surveys, economic statistics, data tables, bibliographies, literature surveys or computer programs etc. Reports can vary in length from a few pages to more than 2,000.

Included in GRA are reports collected by NASA and USAEC and announced in their specialist abstracting services. Much general research is funded by these two agencies.

Here is the major part of the research effort of the United States available for a few pence a report.

2.2 Educational Research Information Centre (ERIC)

The Department of Health Education and Welfare set up ERIC and the associated 20 or so ERIC clearing houses to coordinate and make available research material on education. Each clearing house receives and indexes material on a specific aspect (subject of study or educational problem). ERIC issues each report (some 10,000-20,000 per year) on microfiche and announces their availability through the abstracts journal Research in Education.

Whilst primarily concerned with Education ERIC is rapidly developing into a general social science research report disseminator.

2.3 National Lending Library

The National Lending Library makes available within the U.K., microfiche of all reports listed above (2.1 and 2.2) as well as many from the Rand Corporation and other organisations.

2.4 Commercial organisations

2.4.1 University Microfilms This is probably the best known of the microform companies. It publishes the monthly Dissertation Abstracts International which makes available the vast majority of U.S. doctoral theses as well as many Canadian and a number of European ones. Masters Abstracts selectively abstracts Masters degree theses. All these theses are made available on 35mm microfilm as are over 6,000 periodicals.

2.4.2 Other publishers. Other commercial microform companies make available primary materials in the sciences and social sciences. Much of this material is just not available in any other way. Some examples are:

World Microfilms Publications: periodicals and book collections in the social sciences (mainly).

Readex Microprint Corporation

Microcard Editions

General Microfilm Company

Inter Documentation Company

E.P. Publications

Bell and Howell

3. BACK ISSUES OF PERIODICALS

CLP Library in common with most other libraries is meeting with severe space problems in attempting to store back runs of periodicals for future use. However effective back-up services are from other libraries, CLP Libraries must keep back runs of major periodicals in all disciplines yet these periodicals may be used only infrequently. In addition periodicals vie for highly expensive storage space with undergraduate and research textbook and monographs.

The only practicable solution to this problem is to store back runs of periodicals on microform. Each periodical and discipline has a definite "half-life" (i.e. the time period within which half the use will be made) which tends to be of the order of 3-5 years for the sciences and 5-10 years for the social sciences. The half-life could determine the number of years to be held in hard copy and in microform.

Microform holdings can also overcome the problem of collecting back runs of abstracting and indexing periodicals (e.g. Sociological Abstracts) where these are out-of-print.

The publishers noted in 2.4.1 and 2.4.2 above maintain large stocks of of periodicals.

4. PROGRAMMED LEARNING

4.1 Pressures both from without and from within the Polytechnic (e.g. the modular degree and the trend towards self-directed learning) make it increasingly likely that programmed learning in one form or another will be adopted to a considerable extent over the next 10 years or so.

Programmed instruction has only adopted the use of microforms in complex teaching machines using either 35mm microfilm incorporating scannable coding so that, depending upon the response made, the film is advanced or rewound to the correct frame; or in a fiche based system no longer in production which suffered from frequent machanical breakdown.

Programmes for neither of these systems could easily be produced in-house to meet the needs of specific student groups.

4.2 It is possible, however, by using several standard fiche readers to internally develop and reproduce branched programmes. The key to this is the reader which is equipped with:

(a) a grid which consists of squares labelled A-M vertically and 1-16 horizontally. The grid can be changed in seconds to accommodate fiche with different numbers of frames.

(b) a pointer which moves over the grid and acts as a control mechanism for the plate glass fiche holder.

4.3 Thus a branched programme giving a number of options could look like this:

If the answer is	16	Go to G7
	10	B2
	21	N12

4.4 The advantages are:

.1 In house production of programmes possible

.2 Cheap equipment

.3 Standard equipment which can be used for normal fiche reading

.4 Random access to frames - not linear.

5. LIBRARY CATALOGUE

5.1 If we reach the stage of producing a machine based catalogue for all libraries, then it will be very much cheaper to use Computer Output to Microfilm than to produce even one copy per branch on cards or as line printer output.

5.2 COM fiche or cassette film will enable the library to let each departmet have a copy of either the complete catalogue or of parts of it relevant to their interests.

5.3 The production of a COM catalogue will have the useful by product that upper and lower case can be produced rather than just the upper case normally available from a line printer.

6. SCHOOL OF NAVIGATION

6.1 One possible application within the School generally is to offer the option to students (indeed to encourage them) to receive correspondence course material on fiche.

This could have several advantages:

.1 Very low postage costs

.2 Very low reproduction costs

.3 The scope of the courses could be widened by providing fiche of useful readings e.g. extracts from books, copies of Acts or Courts of Inquiry, periodical articles etc. Students or ships could build up good libraries in this way.

7. SPECIAL COLLECTIONS

7.1 Libraries are quite good at organising books and at indexing periodicals. They are not as good at organising ephemeral material (especially in the social sciences) or at providing in one place the actual material. If an enquirer wants information at book level we ask him to look on the shelves at say 658. Most of the information he wants will be there if we exclude the books which are on loan, missing, being used in the library etc. In any case what is left on the shelves is the unwanted material - all the best books will be on loan or otherwise in use.

7.2 If, however, our mythical enquirer knows that we index periodicals and is looking for information, he must first of all look at the catalogue where he will find more or less helpful document surrogates, he must then hunt through a number of periodicals. Some will be bound, some will be at binding, some on loan, some missing some in loose parts in boxes, some tied up in string, some will have been thrown away. All will be scattered alphabetically and chronologically.

7.3 If, however, we microfiche, in subject groups, any special collections we can offer our enquirer all his information in one place. Two specific applications come to mind immediately, more could no doubt be found:

.1 The School of Navigation Library maintains an index of any articles which give cross sectional and other diagrams of ships. This could be put onto fiche by type of ship together with an index frame which would cover ship names and any particular types of diagram.

The enquirer would thus have all his information at his finger-tips and the security problem would be solved. These fiche can be used in a classroom and could be of value to correspondence course students.

.2 Much valuable sociological material appears in newspapers and journals very often as short items which are not indexed by any of the normal abstracting services. The problems are very similar to those mentioned above and the solution is similar, to fiche the material in subject groups. These solutions give the student more freedom - he is not constrained to work only where the material is housed and yet there is no problem that material will be removed and lost.

8. ARCHIVES

The question of security comes up again in relation to certain types of material which one can regard as having archival value.

Such material includes (to name but two) theses and historical material relating to the early development of the Polytechnic (this also includes current newspaper cuttings).

In many cases the library possesses the only known copy of a document. Microfiche or film would enable the original to be stored securely, less space to be taken up in the library and would probably make the material used more since there would be a more relaxed atmosphere. The theses could be sold to other institutions (as could other CLP publications).

9. SCHOOL OF ART

Another specialist area of possible application which would facilitate storage, retrieval and use of the material is the slide collection at the Sir John Cass School of Art. Whilst much of this material is in colour (and colour microform is very expensive) there is a significant amount in black and white which together with the cuttings of illustrations could be transferred in subject groups to microfiche.

10. ORGANISATION

10.1 One essential for the use of microforms within the LLRS are suitable readers. It is an unfortunate fact of life that there are no effective multi-purpose readers that can cope with all microforms. It is necessary to purchase readers that are specialist to one form if good quality reproduction is required - and if there is an increased use for study purposes then good quality is needed. Standardisation on two types can ease this situation so that there can be a number of readers for the two main types (say fiche and cassette film) at various sites throughout the library together with fewer readers for the less microforms.

An additional problem is that there are various types of cassette or cartridge.

10.2 In addition to readers a limited quantity of reader-printers should be available for those who really require copies of the material. Copies from these are expensive and their use should be fairly strictly controlled.

10.3 Any future purpose-built buildings for the Polytechnic must include adequate storage facilities (temperature and humidity controlled) for archival microforms which can be used for the reproduction of working copies.

Working copy storage equipment is fairly standard and can be easily bought. One of the advantages of fiche is that normal card catalogue drawers or trial outfits can be used.

10.4 Access to any microform collection is simple in that for cataloguing and classification purposes they are treated as books or periodicals. If we purchase any major collections then it is increasingly the trend that good catalogues and indexes appear with these.

11. GENERAL CONCLUSIONS

11.1 Microforms offer considerable space advantages in storing materials. Even if space is not a problem it is uneconomic in Central London to keep shelves full of little used material.

11.2 The cost of microforms is often cheaper than binding costs.

11.3 Microforms offer, in many cases, considerable flexibility and and cheap publication medium.

11.4 Much valuable material is only available on microform and the trend towards primary micropublishing is increasing.

11.5 User resistance to microforms is likely to decrease as staff and students become more exposed to non-book media in all forms.

11.6 The LLRS should begin to acquire microforms of major periodical runs and special collections as they appear and should invest in the necessary equipment. It would be desirable to convert 16mm and 35mm roll film to fiche or cassette form.